Allied Telesis

RAPIER 'i' SERIES

WAN Capable Layer 3 Fast Ethernet Switches

Rapier 16fi

16 port 100FX (SC or MT-RJ) Fast Ethernet Layer 3 switch with 2 uplink bays and WAN access bay

Rapier 24i

24 port 10/100TX Fast Ethernet Layer 3 switch with 2 uplink bays and WAN access bay

Rapier 48i

48 port 10/100TX Fast Ethernet Layer 3 switch with 2 uplink bays

Performance

Allied Telesis' Rapier 'i' series of 10/100Mbps Layer 3 switches deliver an unprecedented level of integration, feature richness and switching performance at affordable prices. With wirespeed Layer 2 switching and wirespeed Layer 3 IP routing on all ports, these switches are designed for high-performance desktop connectivity, workgroup and server farm aggregation or backbone applications. In addition to the impressive switching performance, the Rapier 'i' series brings a large set of optional high-level Layer 3 and security features for more advanced networking applications.

Progressive Features

All Allied Telesis' Layer 3 switches come with the feature rich operating system AlliedWare, which includes Layer 3 IP Static Routing, RIP, RIPv2, VRRP and OSPFv2 routing protocols. For advanced networking applications Allied Telesis offers the Rapier 'i' series with three optional feature licenses: Full Layer 3 upgrade, Advanced Layer 3 upgrade, and Security upgrade. The Full Layer 3 upgrade enables a set of additional routing protocols such as IPX, DVMRP, VRRP, PIM-DM/SM and RSVP. The Advanced Layer 3 upgrade provides a set of the specialized protocols consisting of IPv6, BGP4, and Load Balancer. The Security upgrade offers an ICSA-certified Stateful Inspection Firewall as well as both SMTP and HTTP application gateways.

WAN Support - Rapier Switch/Router

The Rapier 16fi and 24i models support an optional Network Services Module (NSM) with a variety of Port Interface Cards (PICs) to provide Wide Area Network connectivity for E1, T1, PRI ISDN, BRI ISDN, Asynchronous and Synchronous communications, Frame Relay and X.25. The AlliedWare operating system provides Layer 3 IP static routing, RIP, RIPv2, VRRP and OSPFv2 routing protocols, while optional specialized protocols are also available such as BGP4, IPX, RSVP and the multicast routing protocols of DVMRP and PIM-DM/SM. These routing features give the Rapier 16fi and 24i the ability to not only act as a managed Layer 3 switch, but also as a fully specified router with four WAN interfaces.

Switching Features

The Rapier 'i' series of switches are some of the most powerful switches on the market. All Rapier 'i' Layer 3 switches include a suite of advanced switching features such as IEEE 802.1Q VLAN Tagging, IGMPv2, 802.1p Traffic Prioritization of packets at Layer 3 and Layer 4, and broadcast and multicast traffic control. The Quality of Service (QoS) features offered by the Rapier 'i' series are particularly useful for multi-tenant unit, multi business unit, Telco, or Network Service Provider applications.

Return on Investment

Today's economy demands that network investments provide a Return On Investment sooner rather than later. Cost effectiveness is achieved three ways. First, Rapier 'i' is the first Layer 3 switch with an integrated WAN router. Networks using a Layer 3 switch that does not support WAN routing need to incorporate additional router equipment at extra expense. Second, Rapier 'i' has three optional feature licences so you only pay for the specialized features you need. Third, the Rapier 'i' series of switches offer the greatest variety of uplinks at the lowest cost.

Key Features

- Wirespeed Layer 2 - Layer 7 filtering
- Wirespeed Layer 3 IP routing
- Wirespeed Layer 2 switching
- Non-blocking at full line rate for all packet sizes (Rapier 16fi & Rapier 24i)
- Port trunking with link aggregation
- Stacking with open standards based interfaces
- Stateful Inspection Firewall
- BGP-4 option
- IPv6 option
- Load Balancer option
- Support up to 255 VLANs
- Private VLANs
- Bandwidth limiting
- Broadcast and multicast traffic control
- MVR
- IPsec
- L2TP
- IP RIP v1 and v2
- OSPF v2
- VRRP
- TACACS+
- 802.1x
- SNMPv3
- Redundant power supply option
- 2 uplink bays

RAPIER 'i' SERIES | WAN Capable Layer 3 Fast Ethernet Switches

Choose from 100FX, copper Gigabit, or fiber Gigabit modules. Alternatively, choose unpopulated GBIC module and populate it with one of five GBIC types from Allied Telesis.

The Rapier 'i' series offers an unmatched combination both switching and routing capabilities coupled with a flexible set of specialized features and uplink options.

Fabulous Fiber

With 16 fiber 100FX ports the Rapier 16fi is uniquely suited to demanding environments where not only the full-feature richness and switching performance of the Rapier 'i' switch is needed, but also where cable security and electro-magnetic immunity (EMI) are considerations. As well as performing under these demanding environments the 16fi offers the flexibility to provide access to the end station or to perform as an aggregation device. Due to the exceptional cable length afforded by 16fi's 100FX ports, networks that require an aggregation switch that provides routing between distant sites of up to 2000 meters can be comfortably met.

IPv6 - The Future

Don't be shut out of the next generation of the Internet Protocol, IPv6. The Rapier series enables networks to take advantage of IPv6's important benefits:

- Addresses are 16Bytes long in contrast to IPv4's 4Byte addresses.
- Globally unique addresses with more levels of addressing hierarchy, to reduce the size of routing tables.
- Auto-configuration of addresses by hosts.
- Improved scalability of multicast routing, by adding a 'scope' field to multicast addresses.
- A new type of address, the 'anycast address,' which is used to send a packet to any one of a group of devices.

Bandwidth Limiting

All Rapier 'i' series switches come with asymmetric bidirectional bandwidth limiting, per port or per QoS traffic class, at no additional cost. With bandwidth limiting, Network Service Providers can define throughput levels for each customer and sell their various service levels at tiered prices. These features are ideal to manage different applications like VoIP, Web browsing, Video and email to manage fee-based customers. The Rapier 'i' bandwidth limiting feature provides the smallest granulation available in Layer 3 products. Service Providers can define ingress limits down to 64Kbps segments and egress limits down to 1Mbps segments. The segment definitions can be asymmetric and each port can be set to different values. An additional benefit is that loop back ports are not required.

Stacking

Stacking provides Web and CLI based management of up to nine switches with the same effort as for one switch. The Allied Telesis solution uses open standards interfaces as stacking links so that many switches can be stacked across different sites, which is not possible using the proprietary stacking cable solutions. Also the use of open standards interfaces avoids the use of expensive specialized hardware with limited topologies.

Redundant Power Supply

AC models of Rapier 'i' series switches have a Redundant Power Supply (RPS) connector on their rear panel, and use the AT-RPS8000 (redundant power supply). The AT-RPS8000 is a chassis that holds up to four removable AT-PWR8000 RPS units. To provide backup power to Rapier 'i' series switches, each switch must be connected to an AT-PWR8000 power unit, and the power unit must be installed in an AT-RPS8000 chassis.

About Allied Telesis

Allied Telesis was founded in 1987 and now has offices around the globe, more than 2,800 employees and over $500M of worldwide annual revenue. The attributes which have led Allied Telesis to achieve its leading position in the enterprise, operator and connectivity business segments can be summarised by four key elements: its business focus on networking technology for professional markets, where Allied Telesis has proved to be the only company capable of providing a total end-to-end solution at a high price/performance ratio; the ability to handle every aspect of its own products from design to marketing; the development of components and solutions which accommodate flexible, efficient and reliable network construction; and support from sound warranty terms and quality services. Allied Telesis connects the IP world efficiently thanks to affordable and highly reliable network solutions. For more information see: www.alliedtelesis.com

Service and Support

Allied Telesis provides value-added support services for its customers under its Net.Cover℠ programs. For more information on Net.Cover℠ support programs available in your area, contact your Allied Telesis sales representative or visit our website: www.alliedtelesis.com

Performance

Rapier 16fi: 9.6Gbps switching fabric, 5.4Mpps forwarding rate
Rapier 24i: 9.6Gbps switching fabric, 6.6Mpps forwarding rate
Rapier 48i: 9.6 x 2 = 19.2Gbps switching fabric, 10.1Mpps forwarding rate

14,880pps for 10Mbps Ethernet
148,800pps for 100Mbps Ethernet
1,488,000pps for 1000Mbps Ethernet

Advanced switching ASIC
MAC addresses 8K
Buffer Memory 4MB
VLANs 255
Half/Full Duplex
Auto-negotiation
Auto-MDI/MDIX

Reliability

Rapier 16fi 120,000 MTBF
Rapier 24i 640,000 MTBF
Rapier 48i 197,000 MTBF

Interface Connections

10/100TX Shielded RJ-45
100FX Multi-Mode fiber SC or MT
1000SX Multi-Mode fiber SC
1000LX Single-Mode fiber SC
1000T Shielded RJ-45

Power Characteristics

Voltage: 100-240vAC
Frequency: 50-60Hz
Power consumption max: 95W

Environmental Specifications

Operating Temp: 0°C to 40°C (32°F to 104°F)
Non-Operating Temp: -25°C to 70°C (-13°F to 158°F)
Relative Humidity: 95% non-condensing
Operating Altitude: 3,050 Metres (10,000ft)

Acoustic Noise

46.0 dB

Physical Characteristics

Rapier 16fi, Rapier 24i and Rapier 48i,
Height: 66mm (2.6") 1.5 RU
Width: 440mm (17.3")
Depth: 356mm (14")

Rapier 16fi

Unit weight: 6.4kg (14.1lbs)
Packaged weight: 8.0kg (17.6lbs)
Mounting: 19" rackmountable, hardware included

Rapier 24i

Unit weight: 6.2kg (13.7lbs.)
Packaged weight: 7.8kg (17.2lbs)
Mounting: 19" rackmountable, hardware included

Rapier 48i

Unit weight: 6.8kg (15.0lbs)
Packaged weight: 8.4kg (18.5lbs)
Mounting: 19" rackmountable, hardware included

Redundant Power Supplies

AT-RPS8000-xx

4 slot redundant power supply chassis (includes one power module)
Height without rubber feet: 66mm (2.6")
Height with rubber feet: 71mm (2.8")
Width: 440mm (17.3")
Depth excluding projections: 357mm (14.1")
Depth including projections: 400mm (15.8")
Weight: 6.9kg (15.2lbs), packed weight 8.7kg (19.2lbs)

Where xx = 10 for U.S. power cord
20 for no power cord
30 for U.K. power cord
40 for Asia/Pacific power cord
50 for European power cord

AT-PWR8000

Redundant Power Supply module
Height: 64mm (2.52")
Width: 108mm (4.25")
Depth: 300mm (11.81")
Weight: 1.1kg (2.4lbs), packed weight 1.9kg (4.2lbs)

Electrical/Mechanical Approvals

UL 1950
CSA 22.2 No. 950
EN 60950 (TUV)
FCC Class A
EN55022 Class A
EN500082-1
VCCI Class A

Country of Origin

Singapore

Standards and Protocols

Software Release 2.9.1

BGP-4

RFC 1771 Border Gateway Protocol 4
RFC 1997 BGP Communities Attribute
RFC 1998 Multi-home Routing
RFC 2385 Protection of BGP Sessions via the TCP MD5 Signature Option
RFC 2439 BGP Route Flap Damping
RFC 2858 Multiprotocol Extensions for BGP-4
RFC 2918 Route Refresh Capability for BGP-4
RFC 3065 Autonomous System Confederations for BGP
RFC 3392 Capabilities Advertisement with BGP-4

Encryption

RFC 1321 MD5
RFC 2104 HMAC
RFC 2451 The ESP CBC-Mode Cipher Algorithms
FIPS 180 SHA-1
FIPS 186 RSA
FIPS 46-3 DES
FIPS 46-3 3DES

Ethernet

RFC 894 Ethernet II Encapsulation
IEEE 802.1D MAC Bridges
IEEE 802.1Q Virtual LANs
IEEE 802.2 Logical Link Control
IEEE 802.3ab 1000BASE-T
IEEE 802.3ac VLAN TAG
IEEE 802.3ad (LACP) Link Aggregation
IEEE 802.3u 100BASE-T
IEEE 802.3x Full Duplex Operation
IEEE 802.3z Gigabit Ethernet
GARP
GVRP

Frame relay

RFC 1490, 2427 Multiprotocol Interconnect over Frame Relay
ANSI T1S1 Frame relay

General Routing

RFC 768 UDP
RFC 791 IP
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 903 Reverse ARP
RFC 925 Multi-LAN ARP
RFC 950 Subnetting, ICMP
RFC 1027 Proxy ARP
RFC 1055 SLIP
RFC 1122 Internet Host Requirements
RFC 1144 Van Jacobson's Compression
RFC 1256 ICMP Router Discovery Messages
RFC 1288 Finger
RFC 1332 The PPP Internet Protocol Control Protocol (IPCP)
RFC 1378 The PPP AppleTalk Control Protocol (ATCP)
RFC 1518 CIDR
RFC 1519 CIDR
RFC 1542 BootP
RFC 1552 The PPP Internetworking Packet Exchange Control Protocol (IPXCP)
RFC 1570 PPP LCP Extensions
RFC 1582 RIP on Demand Circuits
RFC 1661 The Point-to-Point Protocol (PPP)
RFC 1701 GRE
RFC 1702 GRE over IPv4
RFC 1762 The PPP DECnet Phase IV Control Protocol (DNCP)
RFC 1812 Router Requirements
RFC 1877 PPP Internet Protocol Control Protocol Extensions for Name Server Addresses
RFC 1918 IP Addressing
RFC 1962 The PPP Compression Control Protocol (CCP)
RFC 1968 The PPP Encryption Control Protocol (ECP)
RFC 1974 PPP Stac LZS Compression Protocol
RFC 1978 PPP Predictor Compression Protocol
RFC 1990 The PPP Multilink Protocol (MP)
RFC 2125 The PPP Bandwidth Allocation Protocol (BAP) / The PPP Bandwidth Allocation Control Protocol (BACP)
RFC 2131 DHCP
RFC 2132 DHCP Options and BOOTP Vendor Extensions.
RFC 2390 Inverse Address Resolution Protocol
RFC 2516 A Method for Transmitting PPP Over Ethernet (PPPoE)
RFC 2661 L2TP
RFC 2822 Internet Message Format
RFC 2878 PPP Bridging Control Protocol (BCP)
RFC 3046 DHCP Relay Agent Information Option
RFC 3232 Assigned Numbers
RFC 3993 Subscriber-ID Sub-option for DHCP Relay Agent Option*
"IPX Router Specification", v1.2, Novell, Inc., Part Number 107-000029-001
AppleTalk
http://www.iana.org/assignments/bootp-dhcp-parameters BootP and DHCP parameters

General Routing and Firewall

RFC 3022 Traditional NAT
draft-ietf-ipsec-nat-t-ike-08.txt Negotiation of NAT-Traversal in the IKE
draft-ietf-ipsec-udp-encaps-08.txt UDP Encapsulation of IPsec Packets

IP Multicasting

RFC 1075 DVMRP
RFC 1112 Host Extensions
RFC 1812 Router Requirements
RFC 2236 IGMPv2
RFC 2362 PIM-SM
RFC 2715 Interoperability Rules for Multicast Routing Protocols
RFC 3973 PIM-DM
draft-ietf-idmr-dvmrp-v3-9 DVMRP
draft-ietf-magma-snoop-02 IGMP and MLD snooping switches

IPsec

RFC 1828 IP Authentication using Keyed MD5
RFC 1829 IPsec algorithm
RFC 2395 IPsec Compression - LZS
RFC 2401 Security Architecture for IP
RFC 2402 AH - IP Authentication Header
RFC 2403 IPsec Authentication - MD5
RFC 2404 IPsec Authentication - SHA-1

RFC 2405 IPsec Encryption - DES
RFC 2406 ESP - IPsec encryption
RFC 2407 IPsec DOI
RFC 2408 ISAKMP
RFC 2409 IKE
RFC 2410 IPsec encryption - NULL
RFC 2411 IP Security Document Roadmap
RFC 2412 OAKLEY
RFC 3173 IPComp - IPsec compression

IPv6

RFC 1981 Path MTU Discovery for IPv6
RFC 2080 RIPng for IPv6
RFC 2365 Administratively Scoped IP Multicast
RFC 2375 IPv6 Multicast Address Assignments
RFC 2460 IPv6
RFC 2461 Neighbour Discovery for IPv6
RFC 2462 IPv6 Stateless Address Autoconfiguration
RFC 2463 ICMPv6
RFC 2464 Transmission of IPv6 Packets over Ethernet Networks
RFC 2465 Allocation Guidelines for Ipv6 Multicast Addresses Management Information Base for IP Version 6: Textual Conventions and General Group
RFC 2466 Management Information Base for IP Version 6: ICMPv6 Group
RFC 2472 IPv6 over PPP
RFC 2526 Reserved IPv6 Subnet Anycast Addresses
RFC 2529 Transmission of IPv6 over IPv4 Domains without Explicit Tunnels
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 2711 IPv6 Router Alert Option
RFC 2851 Textual Conventions for Internet Network Addresses
RFC 2893 Transition Mechanisms for IPv6 Hosts and Routers
RFC 3056 Connection of IPv6 Domains via IPv4 Clouds
RFC 3307 Allocation Guidelines for IPv6 Multicast Addresses
RFC 3513 IPv6 Addressing Architecture
RFC 3315 DHCPv6
RFC 3484 Default Address Selection for IPv6
RFC 3587 IPv6 Global Unicast Address Format
RFC 3596 DNS Extensions to support IPv6
RFC 3810 Multicast Listener Discovery Version 2 (MLDv2) for IPv6

Management

RFC 1155 MIB
RFC 1157 SNMP
RFC 1212 Concise MIB definitions
RFC 1213 MIB-II
RFC 1493 Bridge MIB
RFC 1515 Definitions of Managed Objects for IEEE 802.3 MAUs
RFC 2011 SNMPv2 MIB for IP using SMIv2
RFC 2012 SNMPv2 MIB for TCP using SMIv2
RFC 2096 IP Forwarding Table MIB
RFC 2576 Coexistence between V1, V2, and V3 of the Internet-standard Network Management Framework
RFC 2578 Structure of Management Information Version 2 (SMIv2)
RFC 2579 Textual Conventions for SMIv2
RFC 2580 Conformance Statements for SMIv2
RFC 2665 Definitions of Managed Objects for the Ethernet-like Interface Types
RFC 2674 Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions (VLAN)
RFC 2790 Host MIB
RFC 2819 RMON (groups 1,2,3 and 9)
RFC 2856 Textual Conventions for Additional High Capacity Data Types
RFC 2863 The Interfaces Group MIB
RFC 3164 Syslog Protocol
RFC 3289 Management Information Base for the Differentiated Services Architecture
RFC 3410 Introduction and Applicability Statements for Internet-Standard Management Framework
RFC 3411 An Architecture for Describing SNMP Management Frameworks
RFC 3412 Message Processing and Dispatching for the SNMP
RFC 3413 SNMP Applications
RFC 3414 User-based Security Model (USM) for SNMPv3
RFC 3415 View-based Access Control Model (VACM) for the SNMP
RFC 3416 Version 2 of the Protocol Operations for SNMP
RFC 3417 Transport Mappings for the SNMP
RFC 3418 MIB for SNMP
RFC 3636 Definitions of Managed Objects for IEEE 802.3 MAUs
RFC 3768 VRRP
draft-ietf-bridge-8021x-00.txt Port Access Control MIB
IEEE 802.1AB LLDP

OSPF

RFC 1245 OSPF protocol analysis
RFC 1246 Experience with the OSPF protocol
RFC 2328 OSPFv2

QoS

RFC 2205 Reservation Protocol
RFC 2211 Controlled-Load
RFC 2474 DCSP in the IPv4 and IPv6 Headers
RFC 2475 An Architecture for Differentiated Services
IEEE 802.1p Priority Tagging

RIP

RFC 1058 RIPv1
RFC 2082 RIPv2 MD5 Authentication
RFC 2453 RIPv2

Security

RFC 959 FTP
RFC 1413 IDP
RFC 1492 TACACS
RFC 1779 X.500 String Representation of Distinguished Names.
RFC 1858 Fragmentation
RFC 2284 EAP
RFC 2510 PKI X.509 Certificate Management Protocols
RFC 2511 X.509 Certificate Request Message Format
RFC 2559 PKI X.509 LDAPv2
RFC 2585 PKI X.509 Operational Protocols
RFC 2587 PKI X.509 LDAPv2 Schema
RFC 2865 RADIUS
RFC 2866 RADIUS Accounting
RFC 2868 RADIUS Attributes for Tunnel Protocol Support
RFC 3280 X.509 Certificate and CRL profile
RFC 3580 IEEE 802.1X Remote Authentication Dial In User Service (RADIUS) Usage Guidelines
draft-grant-tacacs-02.txt TACACS+
draft-IETF-PKIX-CMP-Transport-Protocols-01 Transport Protocols for CMP
draft-ylonen-ssh-protocol-00.txt SSH Remote Login Protocol
IEEE 802.1x Port Based Network Access Control
PKCS #10 Certificate Request Syntax Standard
Diffie-Hellman
draft-ylonen-ssh-protocol-00.txt SSH Remote Login Protocol
IEEE 802.1x Port Based Network Access Control
PKCS #10 Certificate Request Syntax Standard
Diffe-Hellman

Services

RFC 854 Telnet Protocol Specification
RFC 855 Telnet Option Specifications
RFC 856 Telnet Binary Transmission
RFC 857 Telnet Echo Option
RFC 858 Telnet Suppress Go Ahead Option
RFC 932 Subnetwork addressing scheme
RFC 951 BootP
RFC 1091 Telnet terminal-type option
RFC 1179 Line printer daemon protocol
RFC 1305 NTPv3
RFC 1350 TFTP
RFC 1510 Network Authentication
RFC 1542 Clarifications and Extensions for the Bootstrap Protocol
RFC 1945 HTTP/1.0
RFC 1985 SMTP Service Extension
RFC 2049 MIME
RFC 2156 MIXER
RFC 2217 Telnet Com Port Control Option
RFC 2821 SMTP

SSL

RFC 2246 The TLS Protocol Version 1.0
draft-freier-ssl-version3-02.txt SSLv3

STP / RSTP

IEEE 802.1Q - 2003 MSTP (802.1s)[1]
IEEE 802.1t - 2001 802.1D maintenance
IEEE 802.1w - 2001 RSTP

VoIP

RFC 2543 SIP
G.711 A/µ law Pulse code modulation (PCM) of voice frequencies
G.723.1 Dual rate speech coder for multimedia communications transmitting at 5.3 and 6.3 kbit/s
G.729 A/B (Optional) Coding of speech at 8 kbit/s using conjugate-structure algebraic-code-excited linear-prediction (CS-ACELP)
H.323 v2 Packet-based multimedia communications systems

X.25

RFC 1356 Multiprotocol Interconnect on X.25 and ISDN in the Packet Mode
ITU-T Recommendations X.25 (1988), X.121 (1988). X.25

[1] *It is not possible to guarantee correct L3 switching between two VLANS that are members of different MSTP instances.*

Ordering Information

AT-RP16fi/SC-xx
100FX (SC) 16 port managed Layer 3 switch, with 2 expansion bays and a WAN access bay
Order information: 990-001109-xx (RoHS Compliant)

AT-RP16fiMT-xx
100FX (MT) 16 port managed Layer 3 switch, with 2 expansion bays and a WAN access bay
Order information: 990-11937-xx (Not RoHS compliant)

AT-RP24i-xx
10/100TX 24 port managed Layer 3 switch, with RJ-45 connectors, 2 expansion bays and a WAN access bay
Order information: 990-001317-xx (RoHS Compliant)

AT-RP48i-xx
10/100TX 48 port managed Layer 3 switch, with RJ-45 connectors and 2 expansion bays
Order information: 990-11935-xx (Not RoHS compliant)

Where xx =
- 10 for U.S. power cord
- 20 for no power cord
- 30 for U.K. power cord
- 40 for Australia power cord
- 50 for Europe power cord
- 80 for -48v DC power supply

WAN Access Options

Port Interface Card (PIC) Options

AT-AR020
Single software configurable E1/T1 interface that supports channelized / unchannelized Primary Rate ISDN / Frame Relay[2]
Order Number: 990-001304-00

AT-AR021S (V2)
SSingle basic rate ISDN S/T interface
Order Number: 990-001103-00

AT-AR023
Single synchronous port up to 2Mbps to an external CSU/DSU (AT-V.35-DTE-00 or AT-V.21-DTE-00 cable required)
Order number: 990-001104-00

AT-AR024
Four asynchronous RS-232 interfaces to 115Kbps
Order number: 990-001105-00

AT-AR027
Two VoIP FXS ports
Order number: 990-001356-00

Network Service Modules

AT-AR040 Network Service Module[2]
4 PIC slots
Order number: 990-001299-00

AT-AR041 Network Service Module
8 BRI ISDN (S/T) ports
Order number: 990-001300-00

AT-AR042 Network Service Module
4 BRI ISDN (S/T) ports
Order number: 990-001303-00

Encryption/Compression Module

(for use with Rapier 16fi and Rapier 24i only)
AT-AR061
EPAC encryption/compression card
Order number: 990-11933-00 (Not RoHS compliant)

Uplink Modules

AT-A35SX/SC
1 x 1000SX (SC) Gigabit fiber
Order information: 990-001086-00

AT-A35LX/SC
1 x 1000LX (SC) Gigabit fiber
Order information: 990-001091-00

AT-A39/T
1 x 10/100/1000T (RJ-45) Gigabit copper
Order information: 990-11345-00 (Not RoHS compliant)

AT-A40/SC
1 x 100FX (SC) multimode fiber
Order information: 990-11920-00 (Not RoHS compliant)

AT-A40/MT
1 x 100FX (MT) multimode fiber
Order information: 990-11921-00 (Not RoHS compliant)

AT-A41/SC
1 x 100FX (SC) singlemode fiber
Order information: 990-11922-00 (Not RoHS compliant)

AT-A41/MT
1 x 100FX (MT) singlemode fiber
Order information: 990-11923-00 (Not RoHS compliant)

AT-A42
1 x Unpopulated GBIC module
Order information: 990-001092-00

GBIC Modules[3] (for use with AT-A42)

AT-G8T
1000T GBIC Copper
Order number: 990-97208-00

AT-G8SX-01
500m SX GBIC, based on 50 micron MMF
220m SX GBIC, based on 62.5 micron MMF
Order number: 990-02023-00

AT-G8LX10
10km LX GBIC, based on 9 micron SMF
Order number: 990-11138-00

AT-G8LX25
25km LX GBIC, based on 9 micron SMF
Order number: 990-11643-00

AT-G8LX40
40km LX GBIC, based on 9 micron SMF
Order number: 990-11644-00

AT-G8LX70
70km LX GBIC, based on 9 micron SMF
Order number: 990-11645-00

Redundant Power Supplies

AT-RPS8000-xx
4 slot redundant power supply chassis (includes one power module)
Order number: 990-11126-xx

Where xx =
- 10 for U.S. power cord
- 20 for no power cord
- 30 for U.K. power cord
- 40 for Asia/Pacific power cord
- 50 for European power cord

AT-PWR8000
Redundant Power Supply module
Order number: 990-11152-00

[2] *Only two AT-AR020 allowed in AT-AR040*

[3] *Please check for availability*

Software Upgrade Options

AT-AR-RPFL3UPGRD
Rapier Full Layer 3 Upgrade
- IPX routing
- RSVP
- PIM DM
- PIM SM
- DVMRP

Order number: 980-10002-y

AT-RPADVL3UPGRD
Rapier Series Advanced Layer 3 Upgrade
- IPv6
- BGP4
- Load balancing[4]

Order number: 980-10024-y

AT-RPSecPK-00
Rapier Security Pack Upgrade
- Firewall SMTP
- Proxy
- HTTP Proxy

Order number: 980-10030-y

AT-AR-3DES
3DES Encryption option (requires AR061)
Order number: 980-10000-y

Where y = 00 for 1 shot
01 for 1 licence
05 for 5 licences
10 for 10 licences
25 for 25 licences
50 for 50 licences
100 for 100 licences
250 for 250 licences

[4]*Load balancer requires release 2.5.1 or later and AT-RPSecPK.*

USA Headquarters | 19800 North Creek Parkway | Suite 200 | Bothell | WA 98011 | USA | T: +1 800 424 4284 | F: +1 425 481 3895
European Headquarters | Via Motta 24 | 6830 Chiasso | Switzerland | T: +41 91 69769.00 | F: +41 91 69769.11
Asia-Pacific Headquarters | 11 Tai Seng Link | Singapore | 534182 | T: +65 6383 3832 | F: +65 6383 3830
www.alliedtelesis.com

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